

**CLARIFICATION NUMBER CAO-00-037, REV. 1  
HEADSPACE GAS QA/QC REQUIREMENTS**

**ISSUE**

1. Are manifold systems to collect duplicate samples simultaneously, or sequentially? B1-1a(4), B1-1b(4), and B3-2--Precision
2. What is the meaning of “blind samples to the analytical laboratory” in the context of Section B1-1b(3) condition for field reference samples to be submitted blind to the lab?  
B1-1b(3)
3. What time-frame is available for suspending sampling if the blank fails to meet acceptance criteria, as required by Section B1-1c(3)? B1-1c(3)
4. Is an NCR required by Section B1-1c(3) if a leak test fails, but the equipment is repaired as soon as the leak is discovered? B1-1c(3)
5. Is there a relationship, in terms of numbers of drums sampled, between a sampling batch and an equipment cleaning batch? B1-2b(2) and B3-2--Accuracy

**CONCLUSION**

1. Manifold systems that collect samples into SUMMA® canisters are expected to collect duplicates simultaneously. Other manifold systems and direct canister methods are expected to collect duplicates sequentially.
2. NMED stated that “blind to the analyst” means that the concentrations of the analytes in the Field Reference Standard are unknown to the person conducting the chemical analyses. As long as the analyte concentrations are not available to the analyst, the sample can be considered “blind” to that analyst.
3. Laboratories will not know until after the blank has been analyzed whether it has failed to meet the acceptance criteria. That will trigger suspension of sampling.
4. No. An NCR is not required if the equipment is repaired as soon as the leak is discovered. However, an evaluation should be performed to assure that equipment problems did not affect previous data.
5. No. There is not a relationship, in terms of numbers of drums sampled, between a sampling batch and an equipment cleaning batch.

## DISCUSSION

1. Section B1-1a(4), 4<sup>th</sup> bullets states:

If using canister-based sampling methods, a sufficient number of ports shall be available to allow simultaneous collection of headspace gas samples and duplicates for VOC analyses.

Section B1-1b(4) states:

Field duplicate samples shall be collected sequentially and in accordance with Table B1-1 to assess the precision with which the sampling procedure can collect samples into SUMMA® or equivalent canisters.

Therefore, unless a multi-port manifold with SUMMA® canisters is being used, duplicates are to be collected sequentially.

Section B3-2, Precision states:

The precision of the headspace-gas sampling and analysis operation must be assessed by sequential collection of field duplicates for manifold sampling operations or simultaneous collection of field duplicates for direct canister sampling operations for VOCs determination.

Again, unless a multi-port manifold with SUMMA® canisters is used, duplicates are to be taken sequentially.

2. Section B1-1b(3) requires field reference samples to be submitted blind to the lab. B1-4 specifies the sample tag to include the "QC designation (if applicable)." When the sample team consists of personnel who analyze the samples, the Field Reference Standard cannot be submitted blind. The lab must know which sample is the Field Reference Standard to determine if it meets acceptance criteria. Because under these conditions there is no way to submit the sample blind, the Field Reference Standard designation on the sample will be allowed.
3. Section B1-1c(3) requires sampling to be suspended if the blank fails to meet the acceptance criteria. Corrective actions are required if a blank fails or if there is an equipment leak. Sampling will be suspended if a

blank fails to meet acceptance criteria. This will not be known until after the blank has been analyzed; therefore, once the results are known, sampling will be suspended. An NCR is only required if an equipment leak cannot be repaired when it is discovered.

5. Section B3-2, Accuracy states: "Equipment blanks must also be collected at a frequency of 1 equipment blank for each equipment cleaning batch to assess possible contamination in the equipment cleaning method." An equipment cleaning batch refers to a set number of canisters that is cleaned at the same time. An equipment cleaning batch is not limited to a specific number of canisters as is the case with a sampling batch.